

SYSTEM FOR DIGITIZING TRANSIENT SIGNALS

ABSTRACT OF THE DISCLOSURE

An apparatus for capturing and digitizing at least one analog signal derived from an event with a signal duration that is short compared to the interval between consecutive analog signals has two or more memories each capable of storing a sequence of analog samples of one of two or more analog signals derived from the event. There is a trigger for triggering the sampling and storage in the two or more memories of a sequence of analog samples to occur at about a 0.5 gigahertz or higher rate and circuitry communicating with the memories for selectively initiating the read out of the analog samples in the memories. An analog to digital converter receives each analog sample read out from each of memories and produces from the analog samples corresponding digitized sample values. A digital signal processor controls parameters of the analog to digital converter and outputs the digitized sample values, such that the receiving and conversion and the output of digitized sample values is completed during the interval between consecutive analog signals.